the interscalular regions. Psorasis favors the elbows, knees and scalp and it is rare one finds a case not involving one of these places. Erythema multiforme most frequently attacks hands, feet and face.

Sycosis, of course, is limited to the bearded region. Impetigo contagiosa, which may at times be confused with sycosis, will probably, though not necessarily, show lesions beyond the limits of the bearded region.

Pityriasis versicolor occurs as a rule only on the trunk, especially the anterior portions.

Lupus erythematosus has a special affinity for the nose, about which it develops in a characteristic butterfly pattern.

Syphilitic gummata of the leg and ulcers resulting therefrom are usually observed in the uppermost third while varicose ulcers occur as a rule on the middle and lowermost third.

VII.—Perhaps the value of the color of an eruption has been overestimated. Some, but by no means all, syphilitic lesions are copper or ham-colored. Lichen planus has a purplish and burnished effect. Favus has a characteristic sulphur yellow crust and pityriasis versicolor is evidenced by a dirty, yellowish brown hue. It will be of service to note the color in certain scars. The syphilitic scar is of a sepia brown and regular outline while the tubercular scar is of a whitish hue and inclined to an angular outline.

VIII.—Certain miscellaneous considerations are of positive or negative diagnostic significance. First the punched out ulcer. This is supposed, and probably with reason, to indicate a syphilitic nature. The undermined ulcer, which is often credited with being syphilitic, indicates in reality nothing but secondary infaction. The so-called moth-eaten appearance of the hair in secondary syphilis is usually a reliable guide, particularly as concomitant signs are also as a rule observable. Such appearance of the scalp may be somewhat simulated by reason of the scarring, which follows follicular inflammation, impetigo of Bockhart and furunculosis.

There are many points which might be added and which I hope will be added in discussion. Diagnoses of skin diseases seem often to have been made automatically. In reality nobody knows how many mental processes have been bearing upon the ultimate decision. All this paper professes is to indicate an easy path along which our conscious or our subconscious thoughts may take themselves, together with, may be, a few useful hints by the way.

THREE NON-TUBERCULOUS JOINT LESIONS.*

By JAMES T. WATKINS, M. D., San Francisco.

The three patients I am about to present are sufferers from three different forms of non-specific joint lesion. By non-specific I mean non-tubercular and non-syphilitic. It is a convenient rather than a scientific differentiation. I shall try to show you the essential differences between what we recognize as hypertrophic arthritis, atrophic arthritis and infectious arthritis, and with the clinical picture of each in your minds refer you to the literature for their exhaustive consideration. More than a clinical study of them is not possible if we would compare these three cases in the hour allotted to us. And I deem it of first-rate importance that you should at one sitting see together and compare all three conditions.

Each of these patients has been selected because he or she presents lesions which are typical of a pathological condition. It is always possible for two and perhaps for all three conditions to appear in the same individual, just as a tubercular patient may also be subject to a streptococcic or other infection.

Case 1 was referred to us from one of the medical clinics. The note which accompanies him calls attention to his spastic flatfoot and sciatic neuritis. He is 64 years of age, a Scotchman by birth, a miner by occupation, and says that until his present troubles overtook him he had never been ill a day in his life. He denies a venereal history and claims to have been of a temperate habit. His heart, lungs and digestive tract are reported to be normal. Nevertheless I asked Dr. Zobel to examine his rectum and as much as possible of the large bowel, and the doctor's report shows that the man's colon was found to be filled almost to impaction with foul-smelling fœces.

When we look him over we note that the man is in fair physical condition. Besides his flatfoot and the evidences of a left oblique inguinal hernia, we observe that the man stands with a peculiar forward stoop while his trunk is displaced to the left on his pelvis. His lumbar spine is so far flattened as to be nearly in the same line with his thoracic segment. Further the man volunteers that his left hip joint has become stiff so that he cannot cross his legs when he would lace his shoes. He points out a spot on his buttock which he says has lately become painful. We recognize it as the site of emergence of the left sciatic nerve.

If we now make our manipulative examination, we find first that the motions of the lumbar spine are diminished in all directions, and second that the man cannot bend to the right nearly as freely as he can to the left.

When we test his hip motions we note that abduction is diminished upon both sides, and further that it is most restricted on the left side. The man says he had not recognized that his right hip motions were restricted till we called his attention to it. This late recognition of diminished function is characteristic of the disease in question.

If we turn now to the X-ray pictures which Dr. Freytag has prepared of this patient's spine and left hip, exastoses may be distinctly seen at the right side of the vertebral bodies and intervertebral discs of the fourth and fifth lumbar vertebrae and somewhat less distinctly on the left side. They also appear at the inner border of the acetabulum and at the margin of the femoral head. Those at the inner side of the acetabulum explain the mechanical hindrance

* A clinical lecture from the Course in Orthopedics at the San Francisco Polyclinic.

felt by the patient when he tries to cross his legs. They occur regularly at the periphery of articular cartilages, and are characteristic of hypertrophic arthritis.

Note that the man does not show evidence of joint inflammation nor of constitutional disturbance; no fever, no rapid pulse, no local heat, redness nor tenderness. There is no change in the blood count. Glandular enlargements are not present anywhere. An examination would probably reveal that his urine was scanty, of a high specific gravity and loaded with urates. Finally he tells us this disorder came on so gradually that he does not know just when it began.

This is a fairly typical history and symptom complex of a case of hypertrophic arthritis. I prefer the term hypertrophic arthritis because there are pathological and clinical grounds for using it, whereas the older term osteo-arthritis is artificial, arbitrary and unscientific.

Case II. This young lady was seen by me in private practice some years ago during the acute stage of a disease which has now run its course. Because her case is typical she has been kind enough to permit me to demonstrate her lesions to you.

She is now twenty-five years of age. Her parents were Irish. When she was seventeen she was very much frightened by an attack from some one under the influence of liquor. Her early life was one of drudgery. Otherwise her previous history is negative. When she was eighteen she began to notice spindle-shaped swellings of her finger joints. She is not sure that the swellings did not begin the year before. They were not painful till much later, but her fingers felt stiff. The joints involved were the second and third rows. Gradually her wrists, knees, elbows, ankles, shoulders, and, what is very unusual, her hips became involved.

Deformities in the form of hyperextensions, luxations and subluxations began to develop in the joints first involved and they became painful. These were the deformities she presents to-day. Please observe the glossy, parchment-like appearance of the skin over them.

Had an examination of her urine been made at the time when the disease was active, it would have been found to contain excessive amounts of the salts of calcium. She recalls that at this time her hands and feet were bathed in perspiration. Beyond this there were none of the regular signs of constitutional disturbance nor of local inflammation.

The X-rays of this young lady's case were lost in the great fire, but I am able to show you what are practically identical ones from Dr. Freytag's collection. Please note the lack of density shown, the peculiar clearness with which the internal architecture of the bone is depicted. Again observe the thinness of the articular cartilages as shown by the nearness to one another of the adjacent bones. This picture does not show any erosions nor are the villous fringes apparent.

This patient presents the lesions, history and symptom complex typical of atrophic arthritis, or to call it by its unscientific name, rheumatoid arthritis.

Case III. Contrast the two preceding cases with the following one. This boy is nineteen years of age. Eight weeks ago he was infected with gonorrhea. Two weeks ago his discharge suddenly stopped and simultaneously he began to have pains in his joints, but especially in his right knee joint. This latter became distended with fluid, swollen, tender to the touch and excessively painful on motion. It feels hotter to the touch than its fellow. The skin over it is passively congested. His pulse rate is accelerated and his temperature a degree and a half higher than normal. I should expect an examination of his blood to reveal the presence of a moderate leucocytosis and, if the case were protracted, of a secondary anaemia. The X-ray picture here has been taken to show the soft parts. In the group to which this case belongs bony erosions occur only in the course of the severest infections. These are usually pneumococcic. The hazy shadings about the joints here are limited to the site of the synovial membranes and signify excessive periarticular thickening. The boy has evidently a gonorrheal involvement of his knee joint—an example of a third type of joint lesion, namely, an infectious arthritis.

Here, then, we have examples of three distinct types of non-tubercular joint lesion.

Hypertrophic Arthritis occurs oftener in men than in women, is, as a rule, a disease of advanced adult life and presents characteristic lesions. These latter appear oftener in those joints which are subject to occupational traumatisms. Exposure to wet and cold and sudden changes of temperature seem to predispose to it. Its beginning is frequently and perhaps always associated with intestinal putrifaction. The latter being shown as a rule by the occurrence of flatulence and constipation. It is self-limiting and non-deforming. The onset is insidious and usually painless without either local or constitutional evidences of infection. The characteristic lesion is an irregular hypertrophy occurring at the edges of the articular cartilages. As this new bone is thrown out it interposes a mechanical hindrance to the freedom of joint motions.

Atrophic Arthritis, on the other hand, occurs oftenest in young adult females; is predisposed to by the wear and tear incident to too frequent pregnancies and by the strain and worry of making an inadequate income meet the requirements of modern social life. Not infrequently it follows a great emotional outburst of grief or fright.

The disease process begins insidiously in the second and third joints of the fingers and progresses rapidly to involve the wrists, knees, ankles, elbows and shoulders in the order of frequency in which they are enumerated. There is a clammy perspiration of the palms and soles and the skin over the affected joints is parchment-like and glossy. As in the hypertrophic form of disease, the onset is gradual and, until erosions develop, almost painless. There are no local signs of inflammation, no change in the character of the blood, no swelling of the glands, no increase in the pulse rate, no fever. But excessive amounts of the salts of calcium are excreted in the urine.

The characteristic lesions are the spindle-shaped swellings and the luxations and subluxations consequent upon the shrinking of the cartilage. The characteristic rarefication of the bony structure and the thinning of the articular cartilages are shown in the earliest stages of the disease by the Roentgenogram. There is a round cell infiltration of the synovial villi while their blood vessels show endarteritic changes.

The term **infectious arthritis** must include all joint lesions where a bacteriologic cause can be demonstrated or reasonably inferred. Tuberculosis and syphilis logically come within this classification. Our exclusion of them is arbitrary. Beyond this, the term should include acute articular rheumatism; inflammations of joints following systemic disease, e. g., the exanthemata, pneumonia, puerperal sepsis; inflammations of joints secondary to distant infectious foci. Such infectious foci are to be sought specially in the gastro-intestinal tract, particularly the large bowel, the tonsils, the teeth, the urethra and disease of the middle ear.

The severity and duration of the symptoms will depend upon the nature of the infective organism, but unlike the first two types of non-tuberculous joint disease, the onset is sudden, the pain acute and accompanied by the signs of local inflammation. Heat, tenderness, swelling and congestion are always pres-

ent to a greater or less degree. Signs of systemic disturbance are also present—fever, increased pulse rate, a leucocytosis and eventually a secondary anaemia. Frequently there is general glandular enlargement. The physical examination further reveals symmetrical capsular thickenings and passive congestion of the joints. There is less reflex atrophy and less tendency to deformity than would appear in the atrophic form of joint disease.

The X-ray regularly shows no bony changes to be present, erosions appearing only in the severest, usually pneumococcus infections. Anchyloses, when they occur, are fibrous.

Here, then, are three non-tuberculous, pathologically and clinically different groups of joint lesion. I have elected to spend the time at our disposal in demonstrating them and emphasizing their differences, because where such differences exist, corresponding differences in treatment must be indicated. At our next meeting we will consider the treatment of these three groups of joint disease.

ROENTGENOGRAPHIC FINDINGS IN FRACTURES ABOUT THE ELBOW JOINT.*

By ALBERT SOILAND, M. D., Los Angeles.

Of all the common fractures met with in general practice, those involving the elbow-joint are perhaps the most interesting as well as the most difficult to always manage successfully. Interesting, on account of the number of different fractures that are possible in a small area, and difficult because of the readiness with which the normally limited motion of the elbow can be partially or wholly arrested by a malposition of fragments, or traumatic callus formation.

Believing that a series of Röntgenograms showing these fractures may be of interest, I have taken some pains to collect and segregate into groups the classical fractures as they occur, beginning with the type of break most frequent and exhibiting one of each kind.

In making reference to the following numericals, I cannot state the exact number of each particular fracture, as some plates were sent out before being properly indexed. This, however, does not mitigate the value of the total in round numbers, which can be relied upon to be fairly accurate.

Out of ten thousand X-ray photographs of all sorts made at my office, about nine hundred have been of the elbow joint.

Of these, seven hundred, or three-fourths of the total, have been of the neck and lower segments of the humerus. The most frequent of this class, amounting to about four hundred, is the straight supracondyloid fracture, with backward displacement of lower fragments. This is illustrated in print No. 1.

No. 2, shows perfect apposition of fragments from reduction in acute flexion.

No. 3, shows clearly the inadequacy of a right angle dressing for a fracture of this kind.

It has been suggested that all fractures of the lower humerus can best be dressed in acute flexion. It is no doubt true that a great many may be ideally placed in this position, for with the arm acutely flexed, the coronoid process of the ulna makes a splendid wedge for the condyles anteriorly, the triceps tendon being on a stretch, holds firmly posteriorly, and with lateral pressure by means of bandage around the condyles, an excellent approximation is had.

Print No. 4, however, shows this fracture where acute flexion might produce a serious deformity. Here the lower fragment rotates in the hollow of the olecranon, and upper fragment is displaced backward. It is therefore necessary to dress in some degree of extension, in order to secure relaxation of triceps, and satisfactory apposition.

Print No. 5, is the same fracture with less displacement, where a right angle dressing is sufficient.

The remaining three hundred photos of the lower humerus comprise the different fractures of epicondyle and condyles, often associated with transverse, oblique, or T fractures into the joint.

The internal epicondyle and condyle are quite frequently broken as is illustrated in Print No. 6.

No. 7, is a typical fracture of the external condyle.

No. 8, is a lateral view of a T fracture, where the humeral shaft has been wedged down into the joint.

No. 9, is a T, with forward displacement of humerus, and crushing of condyles.

No. 10, oblique fracture, less violent, with internal lateral displacement of upper fragment.

All these last named fractures can be dressed in acute flexion.

Next in order come fractures of the olecranon. Out of the two hundred remaining elbow fractures, one hundred and seventy-six were olecranon, and the balance were divided between head and neck of radius, which were nineteen, and coronoid of ulna only five.

No. 11, demonstrates simple fracture of olecranon, and No. 12, how full extension approximates fragments perfectly.

No. 13, depicts broken coronoid process, and olecranon.

No. 14, shows fractured radial neck and head. No. 15, fracture of radius and ulna, with complete ankylosis. Right angle dressing for these lesions is mechanically good.

Nos. 16, 17, and 18, extensive injury to all bones of elbow, with deformity.

No. 19, bad fracture of humeral shaft, involving elbow.

No. 20, shows the quite uncommon accident of backward dislocation of both bones without fracture of coronoid, the only one I have seen in my own work.

In presuming to suggest the manner in which these fractures should be dressed in a general way, I have done so from a mechanical standpoint largely, and also from having had ample opportunity to observe results in the hands of many good operators.

A Röntgen examination covering two angles, will tell quickly the best position in which any particular fracture may be dressed.

Scudder, in his excellent late book on fractures says, that all injuries of the elbow should be subjected to an examination under anesthesia.

In the light of modern medical progress, I ven-

* Read before the Thirty-ninth Annual Meeting of the State Society, San Jose, April, 1909.